



CICO, LLC
Post Office Box 14099
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March 1st, 2010

Jeryl W. Covington, Environmental Services Department
Post Office Box 3136
Greensboro, NC 27402-3136

Director Covington,

CICO, LLC is pleased to offer the City of Greensboro a public/private partnership to provide a long-term waste management solution to meet all of the City's solid waste disposal requirements. Through design, financing, permitting, development and operation, we are prepared to create a long-term solid waste management infrastructure system. Utilizing new technology, CICO, LLC will save taxpayers money, control future cost for processing Municipal Solid Waste, create jobs, support Economic development and fund a 501(c)(3) Corporation owned and operated by the residents of East Greensboro to finally begin revitalizing their neighborhood.

We recognize that solid waste is a "business". While CICO, LLC does not own or operate a landfill or own the Waste to Energy (pyrolysis) equipment we propose, we will demonstrate financial responsibility and specific experience to Greensboro's unique situation in order to manage current and future increases to Greensboro's waste stream. Our plan stabilizes cost, gives control to the City of Greensboro and develops a long-term vision for solid waste.

CICO, LLC will operate the White Street landfill at a cost of \$23/ton (adjusted annually CPI). This includes \$19/ton for the City's waste plus \$2/ton for NC State tax and \$2/ton for Community Development (discussed within proposal). In addition to these savings, CICO will assume the closure costs for the C&D landfill and Phase 3, estimated by City Staff to be \$7,400,000. We have also secured funding to transition to our proposed alternative technology at no capital cost to the City. Under this arrangement, CICO, LLC will lease and operate the facility – placing no additional financial responsibility or financial burden on the City and charging a disposal fee of \$30/ton (adjusted annually CPI). Upon funding payback, we expect to have sufficient income to pay the city royalty from energy sales.

In our attached proposal, which will remain valid for acceptance for a period of 120 days from March 1st, we have outlined in detail the CICO plan.

We look forward to working with the City of Greensboro in a public/private partnership to handle your solid waste disposal in the future.

Sincerely,

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* In an effort to provide our proposal in an environmentally friendly fashion, we have only printed one bound copy on recycled paper and included a CD ROM copy for multiple distributions.



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CICO Information



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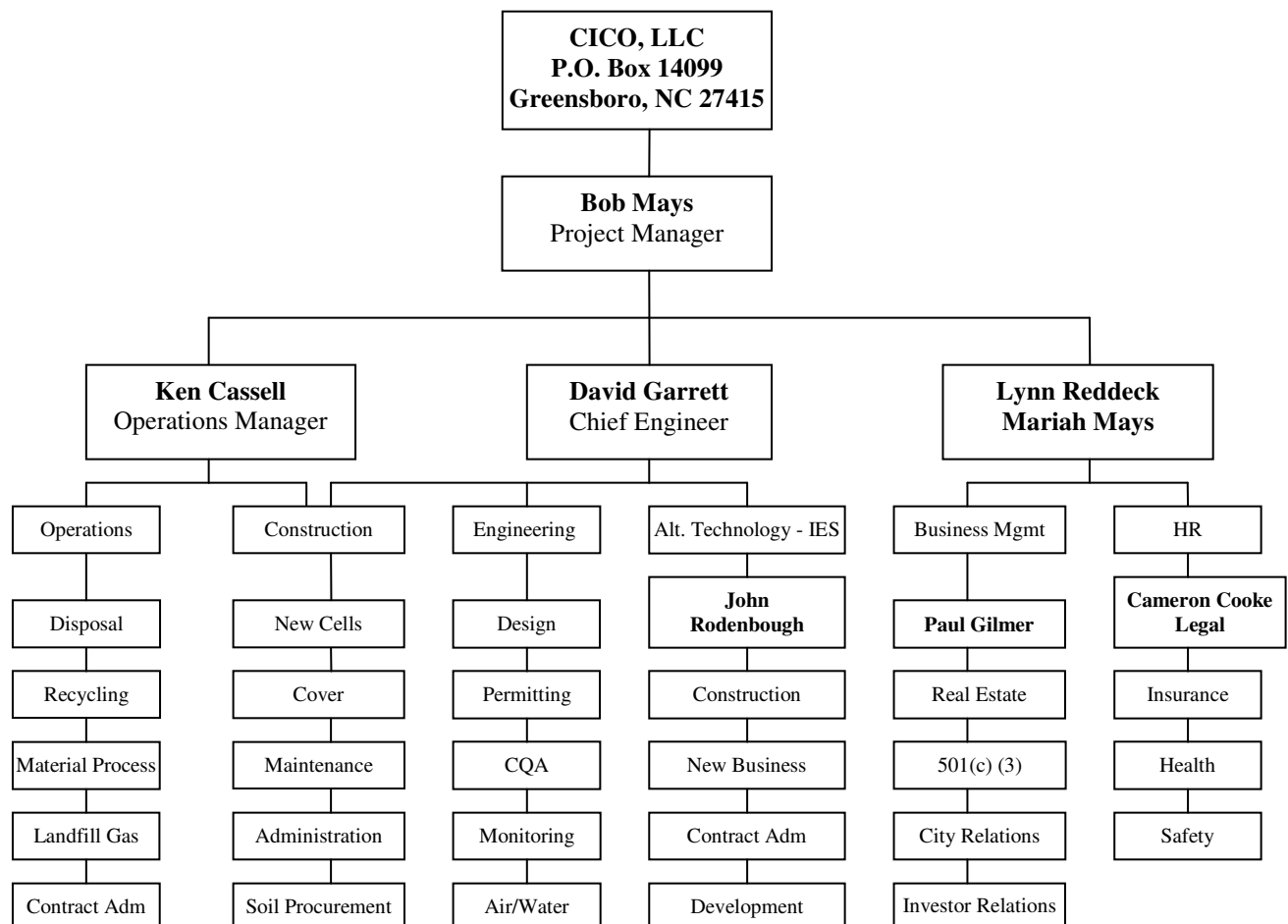


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Who is CICO?

CICO, which stands for City/County, was started in early 2009 as a company interested in examining the economic development of Northeast Greensboro. With the principal members of the company being life-long residents of Greensboro, we know the emotion and discrimination that occurs on this side of town. But, more importantly we believe this area represents the single largest opportunity for Economic Development in Greensboro, resulting in neighborhood revitalization, job creation and improved quality of life; and we believe a public/private partnership between the City of Greensboro and **CICO** to operate the White Street Landfill to be the most important element for the revival of this area.

CICO is comprised of two former Greensboro City council members, three landfill professionals (including one who ran this landfill in the 1980's), three Real estate agents with extensive development backgrounds (including one who lives in sight of the landfill) and two financial consultants, one from Greensboro and one living in Zurich, Switzerland. Together we have identified that the key to funding for Economic Development in East Greensboro is through the White Street landfill, and specifically through introducing new technology to this location for the benefit of the surrounding community and the entire City of Greensboro.



Financial Resources Documentation

In response to the request for identification of the source of financial backing and demonstration of financial strength to ensure that our waste management/disposal option is financially secure during the terms of the intended contract, **CICO** has enclosed two confidential letters in the Confidential Information envelope demonstrating our financial ability. Upon proposal acceptance, **CICO** will, if requested, post a performance bond for the securitization of financial responsibility.



Professional Ability

The success of **CICO** comes from the strength of our team of qualified professionals. Our ability to implement and operate our proposed waste management solution is the result of bringing together the most skilled representatives in the fields of Landfill operations and Alternative Technology.

David Garrett Technology Chairman

With over 25 years experience in planning and managing geological and geotechnical engineering projects, focusing heavily on solid waste projects for the past 18 years, David's cross disciplinary background is ideally suited to complex environmental project design and permitting for mining, industrial, and solid waste facilities. David specializes in facility planning, site characterization, permitting/design, geotechnical engineering, drainage management, geophysical investigation, groundwater and surface water quality, construction quality assurance, stabilization and volume optimization, financial assurance/cost estimation, sedimentation and erosion control, facility monitoring and operations support. Past experience includes major public transportation projects (highways and bridges), commercial/industrial structures, earthen dams, power plants, water supply, waste water treatment facilities, pipelines, pavements, and landfills. Other experience includes general earthwork and foundation design, "pre-buy" evaluations, master planning, environmental site assessments, site restoration and remediation, financial evaluation, operations, local government site plan approval, forensic analysis, and litigation support. David has authored several professional papers and teaches continuing education courses to other professionals, and he chaired a state licensing board and professional societies.

Kenn Cassell Landfill Operations and Planning

Kenn Cassell has worked in the area of Waste Management for over 25 years. This includes over 15 years in the Private Sector and 12 years with the Public. In recent years Kenn has been self-employed as a consultant in the Solid Waste Industry, primarily working in the Southeastern United States.

City of Greensboro: Manager of landfill and Assistant Administrator of Sanitation Division. Modernized landfill up to current EPA standards, directed the construction and implementation of the first landfill gas recovery system. Assisted in the conversion to automated collection in Greensboro. Implemented waste characterization and tracking system to define waste stream. Managed the City's first composting operation. Certified by North Carolina as manager of landfill operations.

Chambers Development Corp: Permitted, constructed, developed and managed the Chambers Atlanta Landfill. A subtitle D facility permitted to accept residential, commercial and special industrial waste in Georgia. Assisted in the development of the Anson County, NC landfill. Southern Regional manager of landfill operations for Chambers, which included 12 landfills across the southeast. Certified by Georgia as manager of landfill operations.

BFI: Permitted, constructed, developed and managed the BFI Sampson County Landfill in Sampson County, NC. A regional landfill permitted to accept waste from within the borders of North Carolina. Implemented a special waste sale and tracking program. Developed and implemented a Bio-remediation facility to handle petroleum contaminated soils. Managed compliance program that kept facility in strict compliance with federal and state regulations. District Manager for eastern NC over landfill and transfer facilities.

Republic Services Inc: North Carolina Area Vice President for landfills, transfer stations, and recycling facilities. This included 4 regional landfills, 1 industrial landfill, 2 recycling facilities and multiple transfer operations across North Carolina. Implemented a complete special waste program for North Carolina.

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Karen Meyer Bertram

President of International Environmental Solutions

Karen Bertram is President/CEO of International Environmental Solutions, a U.S. company in California that has developed a Conversion Technology for processing MSW to energy. IES has its first facility in Riverside County (Romoland, CA, now Menifee) and is the only U.S. waste conversion technology to be selected by Los Angeles County for its Commercial Demonstration Project. (Visit www.socalconversion.org for more information on L.A. County)

Karen Bertram has networked with environmental agencies, both state and federal, and has comprehensive knowledge of the world's leading conversion technologies. She has been invited to Renewable Energy conferences as a guest speaker and as part of discussion panels on the environmental issues of conversion technologies, like the IES Advanced Pyrolytic Systems. Ms. Bertram was featured on "Focus on America" on CNN in 2007 discussing how conversion technologies have a positive "Carbon Footprint" and allow for the production of renewable energy as we navigate down the road to zero waste. In 2008/2009 she appeared on behalf of IES on "The Economic Report" discussing the technology's benefits to communities and the environment.

As a graduate from Texas Tech University, School of Law, Ms. Bertram incorporated her legal knowledge and business experience to help complete the first phase of commercializing the IES Advanced Pyrolytic System. Ms. Bertram has been active in lobbying for Conversion Technologies in the current Federal Legislation as a Renewable Energy as well as the California Legislation AB 222 and subsequent related legislation and its definition and implementation of Conversion Technologies in California.

The list of Cities that IES has been chosen or is on the short list for the final decision.

- Mound Bayou, MS - 400 tpd facility
- Santa Barbara, California - IES is on the short list and a final presentation is due in April
- Taunton, MA. IES was selected as one of the three on a short list for up to 1800 tpd facility
- Yolo County, California - Discussions with IES for Public Private Partnership for 1000 tpd
- LA County selected IES for its commercial demonstration project to be located at Robert A. Nelson MRF and Transfer Station. The report and the evaluation of 40 technologies and then a short list and the final report and process can be reviewed at www.socalconversion.com. MOU with LA County Board of Supervisors will be approved and signed on March 16, 2010.
- Grande Prairie, Alberta Canada - 400 tpd system
IES has been selected and the project will be operational in a year.
- Brumandinho, Brazil – 400 tpd system
- Huahine, French Polynesia - 8 tpd system with solar to provide renewable energy for this island of 5000 residents.

The CICO Approach to Solid Waste Management



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Background

Greensboro's solid waste planning over the past several years has been reactive, not proactive, and the result has negatively impacted the City. Cost redundancies of operating a transfer station while maintaining an unused landfill are an unnecessary financial burden to the taxpayers. The City also lacks funding mechanisms to meet current and future obligations for environmental compliance at the White Street landfill. Greensboro's current program of transferring solid waste out of the jurisdiction has created high costs for the City and left the City vulnerable to reliance on negotiations to secure acceptable costs for transportation and disposal with facilities they neither own nor control.

Simply put, continuing to transfer waste outside the jurisdiction equates to lost revenue potential. Monies that could be spent in the community are being spent somewhere else, and the City's assets and resources are being underutilized in a time of dire economic conditions.

CICO's proposal will change this for current and future waste streams.

In response to the RFP, **CICO** has analyzed process alternatives in two stages to bring some vision and responsible long-range planning to the City's solid waste program. Implementing innovative technologies, some of which were not available 10 years ago, will convert the City's solid waste disposal program from a major liability to an asset. These concepts involve allowing **CICO** to invest in, develop, and utilize the City's existing assets more efficiently, eliminating the reliance on outsourcing to get the job done, putting more money back into the community and providing a revenue stream to meet the City's obligations for maintaining and monitoring the White Street facility. With detailed discussion of logistics and costs presented in the following sections, **CICO** introduces our techniques to bring the following Key benefits to the City of Greensboro:

- Overall reduction in City of Greensboro's solid waste costs
- More efficient utilization of City's existing assets and resources
- Extends disposal capacity and optimizes prior investments
- Promote future regionalization (supplements revenues)
- Introduces new revenue sources to City
- Creates local jobs and new types of business
- Keeps more money available in the local community
- Decreases reliance on outsourced services
- Promotes "green energy" and sustainable use of resources
- Stimulates grass-roots economic development
- Reduces carbon emissions to the atmosphere
- Improves air quality by reducing transportation miles
- Converts liabilities into assets
- Promotes Greensboro as a cutting edge destination for economic development and sets the City as the "Model" for waste technology in the state

Stage One: Updating the White Street Landfill Required Technology Upgrades

(Upgrades also to be implemented in transition to pyrolysis technology at White Street Facility)

Optimize Existing MSWLF: The current Phase 3 footprint covers 51 acres and is approximately three-quarters full (by **CICO**'s estimate), with exterior slope ratios of 4H:1V. These slopes may be reconstructed to a permissible maximum ratio of 3H:1V following minimal engineering study and permitting, which has already been initiated by the City but not fully pursued with the regulatory agency. **CICO** would fully utilize the permitted footprint for MSW disposal – not C&D – in order to keep the City's disposal costs at the lowest possible and to generate investment income to apply toward either future phases of the landfill or new technology. Upgrades to White Street Landfill facilities are shown on **Figures 1 and 2** (See Confidential Envelope).



The existing landfill gas recovery system would be upgraded, at no additional cost to the City, to ensure a continuous supply of fuel to Cone Mills and to develop other uses for the surplus gas that is now being flared – thus eliminating the waste of a valuable resource. A methodology to enhance gas production within the existing lined landfill includes leachate recirculation, the permitting of which has also been initiated by the City years ago but not pursued.

Operation of the landfill would be in strict accordance with applicable regulations and would include alternative daily cover to conserve soil resources. **CICO** would provide all necessary equipment and manpower to run the facility, including the scale house and disposal areas, in addition to providing the necessary engineering, maintenance and monitoring to support the operation. **CICO** believes there are sufficient soil resources on-site for completing Phase 3, but off-site resources are being evaluated, including preliminary discussions with nearby landowners. The optimization of Phase 3 would yield a net waste disposal capacity of 1.7M cubic yards, or approximately 1.2M tons, providing 5 years of remaining capacity. **CICO** would assume the costs of closure and post-closure care (by accrual to an earmarked trust fund) for this unit.

Under this arrangement, the City would pay a tipping fee for residential and commercial wastes collected by the City, estimated in the range of **\$23 per ton** (adjusted annually CPI), and commercial haulers would get negotiated tipping fees that are competitive with other facilities in the region. Market conditions will force a cap on the tipping fees that will attract enough waste to the facility to keep it economically viable. For wastes generated outside of Guilford County, (currently the defined service area in the original permit) **CICO** will pay a host fee to the City. **CICO** will work to redefine the service area through a permit modification and will work with regional hauling companies to bring in wastes from outside the jurisdiction in the interest of regionalization. Please note that any changes to the service area or population served will involve a major modification to the permit, including a public hearing to be conducted by the State.

Phase 4 Landfill Expansion: Due to varying information presented by the City about the future landfill expansion capacity, **CICO** performed a preliminary analysis of the site and determined

that without the need for additional land purchases, approximately 50 acres of contiguous footprint are available, which would yield an estimated 9.5M cubic yards of net disposal volume, or 6.7M tons, which at today's waste stream of 238,000 Tons per year would provide 28 years of capacity – assuming no change to an alternative technology. Phase 4 would be entirely within the current facility boundary. Based on documents made available to **CICO**, the area needed for Phase 4 was included in the original permit studies, but the actual footprint design showing this disposal capacity was not defined. Although public hearings would be required by the State for increasing the disposal capacity by 10% or more, the only additional site studies required would be limited to supporting a detailed design. Future expansion would include the 500 to 625 foot buffers established by the City. See **Figure 2**. (See Confidential Envelope)

Phase 4 would be operated as a full bioreactor landfill to enhance gas production and to extend the airspace. An identified soil deficit for long-term landfill operation would be solved by partnering with nearby landowners, in conjunction with plans for major development within the surrounding community. Additional property is available, mostly owned by the City and some within the current facility boundary, which could potentially provide **another 40 years of capacity** – this would be called Phase 5 – which would likely involve a separate footprint due to the presence of a stream and the addition of more land to the facility boundary, i.e., another permit modification.

This analysis was performed to provide the City with the most possible options, but in the event that an alternative technology is developed, keeping a small landfill footprint in reserve is recommended for bypass operation or disposal of the carbon residuals (in the event that markets for the residuals soften in the future). In any event, **CICO** would assume all permitting and construction costs, as well as conducting all operations, closure and monitoring and maintenance of the facility.

C&D Recycling: **CICO** will implement aggressive recycling of the C&D waste stream to extend Phase 2 footprint. Based on nearby C&D recycling operations, **CICO** anticipates at least a 50% recycling effort. The City has allowed the C&D permit to expire, believing it was nearly full and in preparation for closure. However, current slope ratios in the C&D landfill vary from 5H:1V to 9H:1V, whereas regulations allow slopes of a much steeper 3H:1V ratio – this simply translates to unused airspace. **CICO** projects that with slopes reconstructed to a modest 4H:1V, allowed by the regulations without special engineering analysis, the Phase 2 C&D landfill can be extended by 780,000 cubic yards, which will yield an estimated 5 years of capacity. **Figure 1** (See Confidential Envelope)

Under this proposal, **CICO** would assume the permitting costs for a slope expansion and for the closure and post-closure costs for Phase 2, along with some of the ground water monitoring – but not the costs of an ongoing assessment and possible remediation of old waste units beneath the C&D landfill. **CICO** would willingly apply its expertise to help reduce the costs of long-term obligations for Phase 2 by negotiating an end to the assessment with the State. Markets have been identified for the recycled materials, which will provide a modest amount of revenue and help the City achieve a larger percentage of its recycling goals. Local businesses may be used for processing and transporting the materials, which supports jobs in the served community.

LCID and Yard Waste Recycling: A short-term alternative under consideration is “pelletization” of vegetative wastes (e.g., yard wastes and LCID) to generate boiler fuel and eliminate the need for composting operations on site (the composting has

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been identified as a source of odors) which **CICO** seeks to eliminate as part of making the White Street facility more compatible with the surrounding neighborhood. An emerging market for the wood wastes is boiler fuel. There are currently several boiler fuel customers in the region and an anticipated future customer – Duke Energy – has announced intentions to use wood fuel as part of a “green energy” initiative. Some of the wood wastes can be turned into mulch, which is not typically a smelly operation because the materials must be removed periodically.

CICO intends to contract with one or more local, small business enterprises, Piedmont Pellets and/or A-1 Sandrock/ARC, to process the vegetative wastes into boiler fuel and mulch – but not compost. The contractors have indicated they have scalable capacity and can handle 100 tons of material per day – enough to meet the needs of the facility intake. Under this arrangement, City residents would be allowed to bring LCID and yard waste to White Street with a negotiated gate charge (including City collection vehicles) but commercial entities and private haulers would pay a modest tipping fee. The contractor would be allowed to work on the premises in a designated area and arrange all bulk material sales, paying CICO a tonnage fee, and the City would be paid a modest royalty for the sales of mulch and boiler fuel – all of this is contingent on finalizing a contract with Duke Energy.

Other Changes to Upgrade the White Street Landfill: The low-cost installation of small diesel generators to convert the surplus gas, an energy resource now being wasted by flaring, to



“green energy” electricity and residual heat. This energy would be used in turn to develop future businesses, such as greenhouses located nearby to support year-round production of locally grown, fresh produce. Studies in other jurisdictions indicate the potential for relatively low-cost greenhouses to generate income potential of \$30 per square foot in a year-round mode of operation. The development of 100,000 square feet of greenhouses could generate \$3 million dollars per year for local entrepreneurs, including youth groups or young people

considering the resurgence of agriculture as a career. Space is available within the City’s property (right on top of the closed landfill units and in former borrow pits) to locate the greenhouses or other “green energy” projects.

Early discussions with leaders from the local community favored this idea, providing there will be some measure of cooperation with the community for access to these facilities. The prospects of year-round agribusiness as an economic stimulus and an educational opportunity are gaining attention State-wide through a farm cooperative called Foothills Connect. A pending partnering relationship between Foothills Connect, North Carolina A&T University, and **CICO** is under discussion, which could bring new business to the area using the landfill as a resource – the use of surplus landfill gas would merit royalty to the City.

What Will NOT Change: Continued supply of landfill gas to Cone Mills will be ensured. CICO will operate the gas production facilities via a subcontract yet to be identified, or existing City forces could continue to operate the gas production facilities for a savings in the unit disposal cost and, potentially, a share in future revenues from expanded uses of the gas. **CICO** will not become involved in the ongoing ground water assessment – or any future remediation work – for Phases 1 or 2, except at the specific request of the City, since these were pre-existing conditions that are not specifically tied to current disposal costs.



Stage Two: Progression to Alternative Technology

Safe, state-of-the-art technology that **CICO** can implement at no capital cost to the City at the White Street Facility.

Advanced Pyrolysis System: **CICO** plans to implement a thermal conversion process known as pyrolysis – not waste incineration – that can convert nearly 100% of the City’s non-recyclable solid wastes (garbage, yard wastes, and WWTP bio-solids) into “green energy.” The process heats wastes at moderate temperatures and zero-oxygen conditions to form “synthetic gas” (methane, ethane, propane, and carbon monoxide) and a sterile, non-toxic carbon-char residue. The “syn-gas” is oxidized at high temperatures to generate steam and electricity, using air drawn from within a fully enclosed building to eliminate odors. The carbon-char represents one-tenth of the original waste volume and can be used as an agricultural soil amendment or as a raw material for manufacturing. Unlike a plasma torch, this process requires very little external energy (landfill gas can be used to initiate the pyrolysis) then heat is recycled in a self-sustaining loop to keep the process going with a net-positive energy balance and no odor or harmful emissions.

A pyrolysis operation can recycle nearly 100% of the City’s total waste stream by converting the wastes to “green energy” and a marketable, inert byproduct.



Pyrolysis has been used around the world for manufacturing coal-gas and synthetic oil for decades. Systems for converting agricultural wastes to gas and “bio-diesel” fuel now operate in central Virginia and a prior installation was located at NC State. The earlier systems were “batch plants” that required a lot of down-time and reheating, but recent advances in the waste handling and heat recovery aspects have improved operational efficiency and reliability to the point where the system can be cost competitive with landfills. The breakthrough technology is a proprietary, automated sorting and shredding operation that feeds waste continuously into a specifically designed pyrolysis chamber, which itself is made of proprietary, high-

temperature alloys that lengthen the service life of the unit. Facilities for converting MSW are now operating in California and throughout Europe (soon coming on-line in Mississippi, Massachusetts, Brazil, Alberta Canada, and French Polynesia). World-wide interest in this technology has made available billions of investment dollars.

International Environmental Solutions: **CICO** researched numerous alternatives before identifying **International Environmental Solutions** (IES), a California Certified MWBE enterprise, designed as the most cost-effective and fundable alternative technology currently available in the world. The IES design is modular and scalable in 200-tpd increments. Greensboro’s waste stream can be phased in as a compliment with respect to ongoing activities at the White Street facility. Coupled with an effective material recycling program to remove glass and metals, the IES system will accommodate the entire MSW, C&D, LCID and yard waste streams (along with WWTP bio-solids) with prior sorting, drying and shredding required to produce an optimum feedstock in the 2-inch minus range. The residual carbon-char (see photo) is completely inert.

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Through recirculation of waste heat, the operational efficiency has increased over older “batch plants,” and the elimination of odors and pathogens allows near 100% recycling of the waste stream in relatively close proximity to population centers. The power production operation runs continuously and requires semi-skilled to highly skilled labor. While this is a proven and patented technology, long-term educational and research opportunities abound through the local universities and community colleges. The availability of surplus heat and electrical power will spawn new business enterprise and educational opportunities, year-round agriculture, manufacturing, and real estate development, making the City’s waste disposal program not only sustainable but placing it at the core of local economic stimulus.



IES has facilities now in operation or under development in numerous countries and in the United States, including a full-scale facility operating in California that for the past 5 years meets the stringent California air quality regulations. **CICO** has secured funding to make the transition to this alternative technology at NO capital cost to the City. The proposed funding does not rely on federal stimulus for success. **CICO** and IES partners will own and operate the facility, placing no additional responsibility or financial burden on the City. Under this arrangement, the City will pay a disposal fee of \$30 per ton (adjusted annually CPI). Upon funding payback, **CICO** expects to have sufficient income to pay the city royalty from energy sales.

IES Process Description: A multi-stage processing unit (see photo) operates under carefully controlled conditions. Following the initial sorting and shredding, the waste stream is continuously fed into a **thermal converter** chamber (foreground), through which the wastes are conveyed via a twin-screw mechanism and heated to a temperature of 1400°F to 1600°F without oxygen. Gases emitted from the rapidly decomposing wastes are captured diverted to a **thermal oxidizer** chamber, where the gases are burned at temperatures up to 2500°F. From there, the heat energy is directed through a **heat recovery unit**, where high-pressure steam is formed and diverted to steam turbines to generate electricity. Waste heat from the oxidizer is recycled back to the thermal converter to sustain the heating process with little additional heat input (as long as the process is not shut down). Supplemental natural gas (or landfill gas) will be supplied to maintain a steady temperature in the thermal converter. Electrical power is fed to the local power grid. Air pollution abatement includes bag house particulate collectors and wet scrubbers. Odors are abated by pulling the air from the waste handling areas into the thermal oxidizer.

The whole system is compact and can be housed in a steel frame building measuring 400 by 400 feet, which includes two-days of feedstock storage space in an initial cache. A tentative machinery layout for a 400 tpd facility is shown on **Figure 3** (See Confidential Envelope). Outside the building resembles a light manufacturing facility – large doors and



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vent stacks are all that will be visible. Internal airflow is captured and fed through the thermal oxidizer to control odors. The waste processing system is scalable in multiples of 250 tpd increments – initially a single processing unit capable of processing up to 250 tpd will be installed as **Phase 1**. **Phase 2** will upgrade the system with up to five processing units, anticipated for a design average MSW waste stream of 1000 tpd. The system runs continuously, 24/7, so higher MSW days (up to 1500 tpd) can be accommodated by storing the materials in the cache until they can be fed through the process lines. Inert materials, e.g., C&D, LCID and yard wastes, will be stockpiled and fed through the system during slower intake periods.

Waste Processing: Based on the City’s RFP, the total annual waste stream, most of which can be converted, is anticipated to be the following:

Household and Commercial MSW*	238,805 tpy	=	800 tpd	
Construction and Demolition (C&D)	72,124 tpy	=	240 tpd	30% recycle**
Yard Waste (Vegetative Debris)	29,790 tpy	=	100 tpd	
Waste Water Treatment Biosolids	7,766 tpy	=	26 tpd	
TOTAL	348,485 tpy	=	1162 tpd ***	

*excludes 29,957 tpy of recycled goods, processed by a contractor

**removal of inerts to make aggregates, mulch, solid fuels; 50% recycling is anticipated

***based on 300 days per year operation (the pyrolysis plant will operate 365 days)

Even with an aggressive recycling program, a municipal waste stream contains large quantities of paper, plastic, and food wastes (often all mixed), disposable diapers, and other putrescible materials that cannot be reused. The pyrolysis process can take all these materials and convert them to combustible gas and burn that fuel cleanly to make steam. Glass, metal, certain recyclable paper and plastic will be removed via curbside recycling in a customary manner. The wastes typically report to the facility at a moisture content varying from 40% to 60%, the design value is 50%.

The first step of the pre-processing is semi-automated sorting, as in a Material Recovery Facility (MRF), to remove remaining inert materials. Bulky items (carpet rolls, furniture, etc., would hinder the operation of the pyrolysis feed, thus pre-sorting on the tipping floor will be performed to isolate and remove bulky objects that cannot be fed through the waste shredders. The materials are then shredded to a “2-inch minus” particle size and either stockpiled within a cache, located near head of a conveyor leading to the thermal converter, or the wastes are passed through a heated drier – utilizing some of the waste heat – and dried back to an optimum 20% moisture and fed directly into the thermal converter. Each processing line can accommodate 10 tons per hour of “wet” waste each (20 tons per hour for two tandem units), which allows a design throughput of 125 tpd of “dry” waste.

MSW Recycling: **CICO** envisions that the pre-processing activities required for the pyrolysis will be conducted in a semi-automated material recovery facility (MRF) – to be constructed within an enclosed tipping and waste handling area at the front end of the pyrolysis machinery, shown on **Figure 3** (See Confidential Envelope). The costs of the sorting and processing equipment are included in **CICO**’s capital construction program.

Process and System Details – The specific inputs and outputs of the proposed system:

Phase 1 = Two 200 TPD multi-stage waste processing units and One boiler/generator

Phase 2 = Five 200 TPD multi-stage waste processing units and Two boiler/generators

Inputs:	<u>Phase 1</u>	<u>Phase 2</u>
Waste Stream (All wastes), tons per day	400	1,000
Heat source (natural gas or LFG), mm BTU / day*	375	938
Cooling Water (evaporative losses), gallons / day**	7,800	15,600
Outputs:		
Power output in MW***	8.3	20+
Electricity generated in a year, kW-hr/day****	484,482	1,211,200+
Carbon-char and dust residuals, tons per day*****	25	62.5

OTHER CONSIDERATIONS:

Environmental compliance

- Air quality – minimal impact – uses bag house, flue gas recirculation, wet scrubber
- Water Quality – no effluent – recirculation of steam, cooling water, blow down
- Ground Water – no impact
- Induced Draft Fan – pulls air through waste handling building to capture odors

Staffing requirements – 24 to 28 jobs

98% system availability based on 5 years of performance in California

Bonus heat source – support future agribusiness (est. \$30/sf greenhouse revenues)

Net reduction in greenhouse gases with carbon offset credits

*One mm BTU-one million (thousand thousand) British thermal units, equivalent to 1000 cubic feet of natural gas

**Worst-case scenario for operating pro forma, excludes recycled direct heat and water

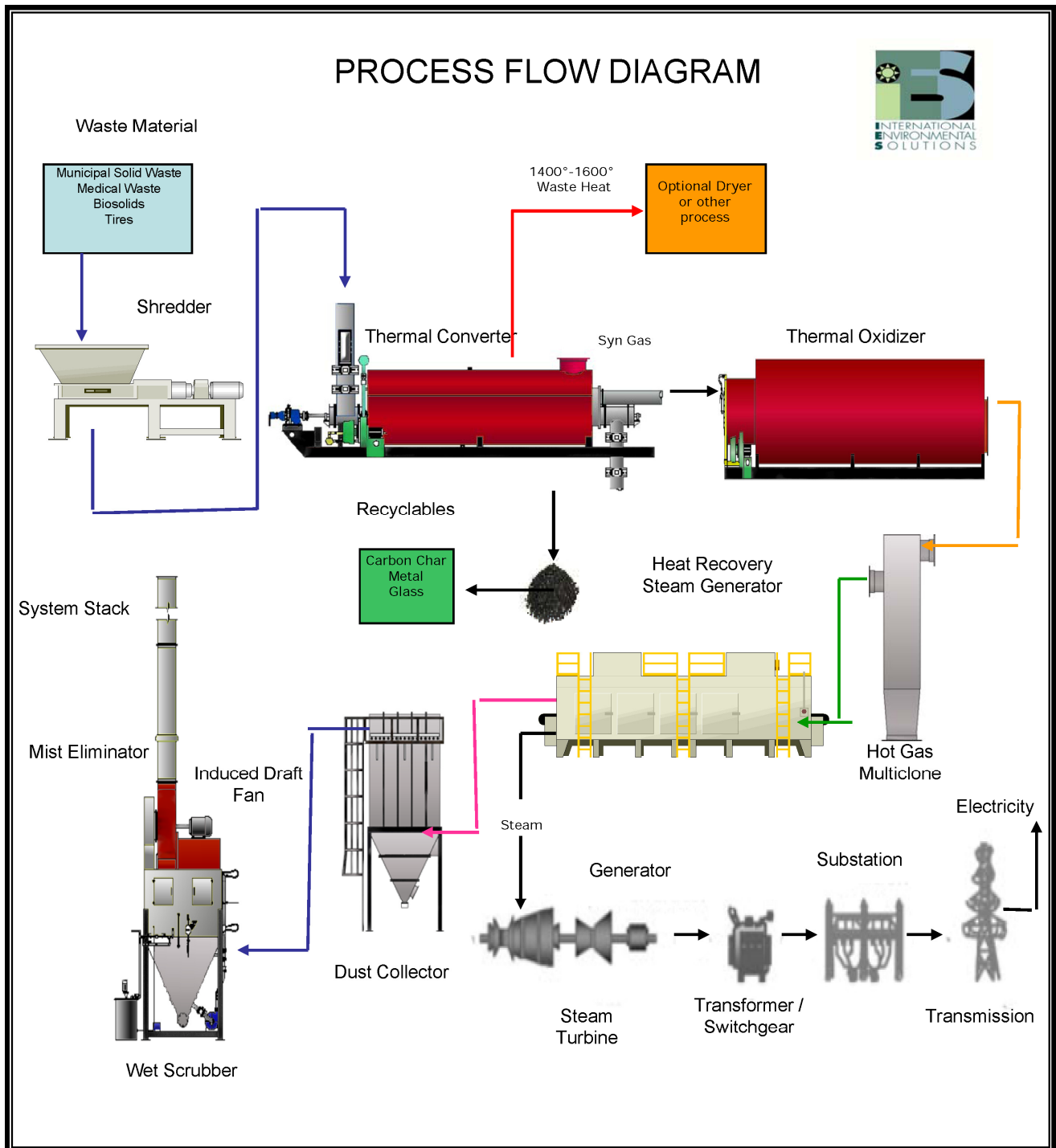
***Based on a design caloric value of 5,400 BTU/pound, typical for MSW, generators rated in 5 MW increments

****1 BTU = 0.3 Watt-hr, thus 1 mm BTU is equivalent to 300 kW-hr

*****Calculated for disposal as an expense, neglects alternative uses that avoid disposal

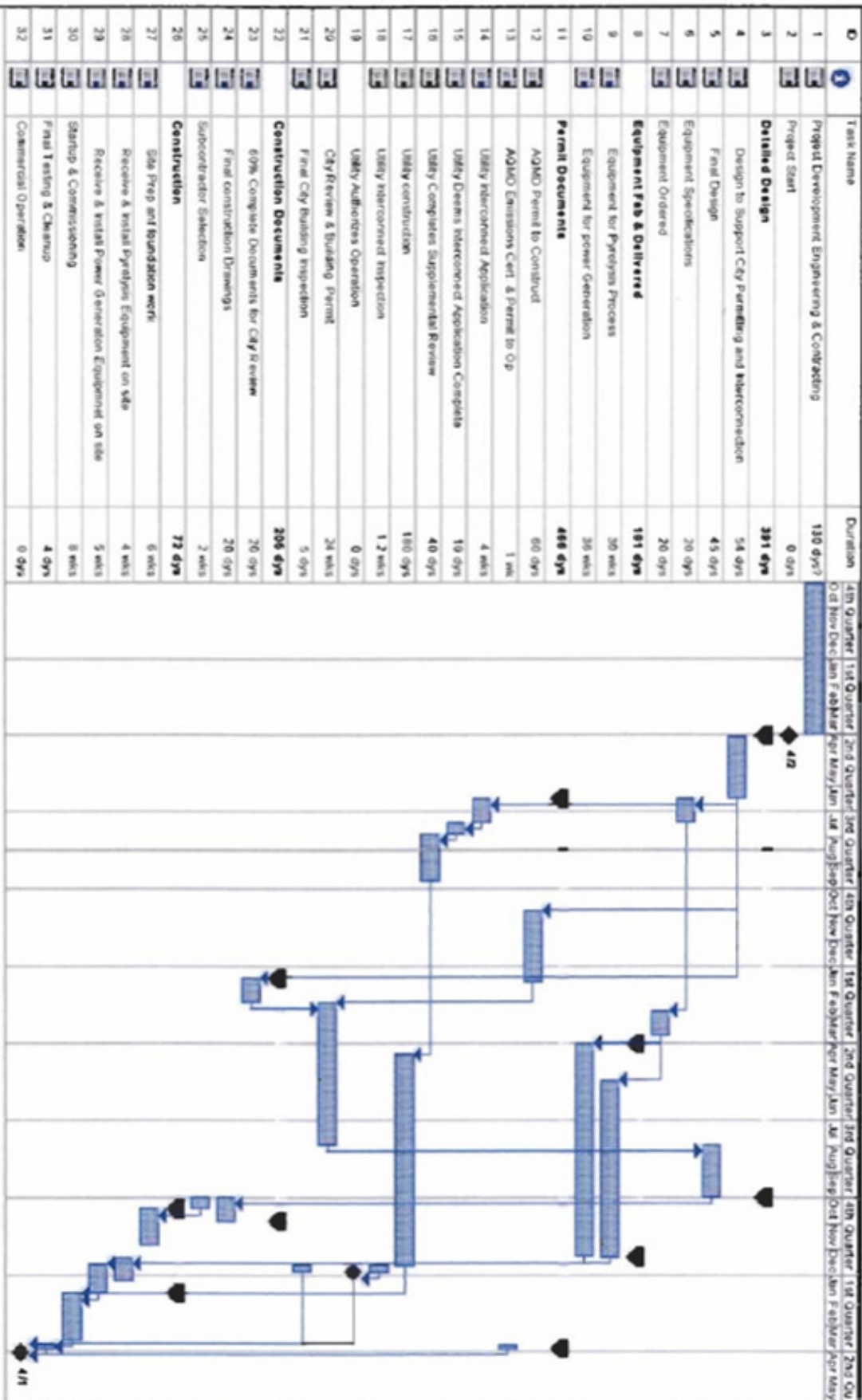


IES Processing System



CITY OF GREENSBORO

Preliminary -- For Planning Purposes Only



Date: Wed 8/15/07

Task
Critical Task
Split

Progress
Milestone
Summary

Project Summary

External Tasks
External Milestone

Duration

Technology Summary

Stage One: Updating Landfill Operations

Reactivate full operations at the White Street Landfill, including a contiguous expansion (Phase 4) within the existing (permitted) facility boundary.

Key Points:

- The least expensive solution, estimated to reduce disposal costs by half of the current \$43 per ton (per **CICO**'s pro forma)
- Eliminates the City's future capital expenditures for construction, operation, closure and post-closure – including a planned near-term \$7.5M bond
CICO would absorb these long-term obligations.
- Provides the opportunity to stimulate the local economy with new jobs associated with alternative energy projects and support services

Stage Two: Waste Management Progression to Alternative Technology

Implement alternative technology (**Advanced Pyrolysis System**) at the White Street facility, building on Landfill updates with a phased approach over a 10-year period.

Key Points:

- State-of-the-art technology that reduces reliance on the landfill and eliminates outsourcing (keeps more disposal dollars in the community)
- Scalable technology that can be implemented seamlessly in phases that compliment other disposal activities, with no disruption of service
- Proven technology that has been in operation around the world and within the United States for years while meeting strict California air standards, which exceed those of State and Federal
- Fundable technology through special financing made exclusively to **CICO** – **with no capital costs to the City and no reliance on federal stimulus**
- Versatile technology that can handle ALL the City's waste streams (commercial/household garbage, C&D, yard waste, WWTP bio-solids)
- Reduces solid waste volume by approximately 90%
- Does NOT require huge inputs of energy. Equates to a positive energy balance
- System eliminates odors, with no air, water or ground water impacts
- Carbon-char residuals have economic value and may not require landfill disposal
- Stimulates private investment and new business development, providing new high-tech jobs in the immediate vicinity of the landfill
- Provides educational partnering opportunities with local colleges
- Generates "green energy" with long-term income through electricity sales and carbon credits that can be shared with the City
- Access to landfill gas that will support the pyrolysis operation with less operating costs and increase potential revenue

Why CICO chose not to offer the following Waste Management/Disposal Options:

Why no Plasma Arc or Torch:

1. This method will not meet the RFP requirement of the city
2. Extremely expensive and internal parts must be periodically replaced
3. Releases additional toxic gases, which must be maintained
4. Uses large degrees of energy to run
5. Is currently used, almost exclusively, for highly contaminated and radioactive sites
6. There is no legal authorization in NC to use any of its end products
7. It is not a method for municipal waste
8. No track record of success and very limited availability of technical personnel to run this method

Why No Incinerator:

1. Very expensive to run
2. Extremely old technology
3. It is not a clean method
4. More dangerous than other methods
5. Costs more to implement than any energy it may produce
6. This method is being abandoned in favor of other technology in other landfills

Why No Mining:

1. Going into existing waste introduces oxygen and will create fires
2. Exposure to chemicals will occur to onsite workers and perhaps close neighbors
3. The potential revenues will not cover its costs
4. The mined materials would need to be stored in a new, lined cell which is expensive and must be permitted
5. Would need to destroy the existing gas recovery system
6. Has never been done in NC and it is limited worldwide due to the negatives. We do NOT want to be the guinea pig!

Regionalism

Bob Mays, project manager of **CICO**, LLC, has more than 20 years of extensive regional involvement. As the former co-chairman of Triad Horizons, Mays was one of the founders of what is now known as Piedmont Triad Partnership with projects such as PART and Triad Park.

CICO contacted each responsible party in the Triad area to measure their level of interest in a regional cooperation with Greensboro. To date, the immediate Triad area each went their own separate way in 2001 after Triad governments failed to create Regional Solid Waste alternatives. Most of the municipalities operate a profitable landfill with adequate future space and little or no interest in joining the City of Greensboro. Interestingly, the Winston-Salem solid waste plan mentions future cooperation with Mecklenburg County, not Guilford County.

CICO believes that our new affordable technology will allow each city to revisit their positions, thus bringing Guilford County back into future waste cooperation negotiations.

Economic Development

CICO believes that the appropriate study area to begin this project is shown on the attached map.

Approximately six hundred acres of undeveloped property provides the basis of the future development in this study area. **CICO** has approached property owners initially in these three areas and have received great interest. With the Outer Loop, the lower land prices and the methane gas, **CICO** has advantages over many competing areas. The opportunity is to create “shovel ready” areas for future prospects.

We find this area compatible with development in light industrial mixed use with some supporting retail services. The City of Greensboro will have a great interest and role in the creation of jobs and property tax in this area.

The 600 acres of undeveloped land around the landfill and the completion of the urban loop will spell economic success for the community. **CICO** has paid to begin the formal process to establish a 501(c)(3) corporation to be called Eastern Development Growth Enterprise and has committed to pay a \$2 per ton fee for waste brought to the landfill. We will also establish additional LLC's for industrial development and pledge an economic interest for EDGE in each of these projects. After numerous meetings and presentations, this represents the best chance for funding improvements in the neighborhood. Additionally, **CICO** has decided to make many operational changes at White Street to lessen the impact on this community.





Study Area Map Key*



1. Economic Study Area - Line marks approximate boundary for emphasis area. EDGE will make final placement
2. Highway 29
3. E. Cone Blvd - Important to accelerate extension to Nealtown Road. City bond funds approved to connect Nealtown to Cone Blvd. and engineering nearly completed
4. Cone Mills- 50% of landfill methane contracted to go to power their boilers
5. Community Transit Route - EDGE could sponsor a dedicated bus route to access retail, GTCC, work and medical facilities
6. Retail areas
7. Buffalo Treatment Plant
8. Greensboro Sports Plex - Bob Mays and Don Linder renovated this former Belk Distribution Center and sold it to the City of Greensboro
9. Cone Blvd. extension - Need to accelerate design and funding to extend Cone to the Urban Loop. Interchange is not currently planned or funded
10. Nealtown Road Bridge
11. Grocery store and Lifestyle Center - EDGE could provide funding
12. Landfill:
 - A. Scale house/entrance will be moved to Rankin Mill Rd near Urban Loop to eliminate traffic through neighborhoods
 - B. Phase I - Closed
 - C. Phase 2 - Construction and Demolition waste
 - D. Phase 3 - New cell construction
 - E. Greenhouses heated by methane
13. Outer Loop - We will present our Economic Area Study Plan to DOT in 2010 and propose another intersection at Hines Chapel Rd. City has done preliminary study of extension of Cone Blvd to Hines Chapel but it is unfunded. Approx 50% of the land right-of-way has acquired
14. GTCC
15. Kmart Distribution Center
16. Railroad
17. Keeley Park - regional park to participate in Adopt-A-Park program
18. Correctional Facility - Now closed
19. Walking Trail
20. Future 600 acres of economic development
21. Osborne Waste Treatment


*** Study Area Map is located in the Confidential Review Envelope**



Community Benefit

Eastern Development Growth Enterprise,  is a 501(c)(3) Corporation in the process of being formed at **CICO**'s expense for the sole benefit of the neighborhoods within the White Street Economic Study area. The creation of a 501(c)(3) Corporation funded by fees from the project will allow immediate and long term reinvestment in the neighborhood. It will allow the leverage of local, state and federal monies and serve as a stimulus for economic development and neighborhood redevelopment. The details of the Board of Directors, the Executive Director, expenses and stipends will be entirely decided by the neighborhood. Additionally, projects to be funded by  are to be determined by the Board of Directors.

The funding source comes from a fee of \$2 per ton of municipal solid waste as part of the payment for . Depending on the tonnage received at the White Street Landfill we estimate this fee to generate approximately \$500,000 per year. We intend to remit this fee in quarterly payments directly to the  bank account of choice.

Additional funding for  comes from the economic interest the neighborhood will hold of 5% in each Limited Liability Corporation for land development for approximately six hundred acres in the project area. Proceeds from these two opportunities will represent millions of dollars over the 40 year life of the lease for **CICO** with the City of Greensboro.

CICO will make available to the neighborhood professional help in the initial writing of bylaws, filing tax forms, structure of accounting and additional business services. **CICO** would request that the association provide its own Legal Counsel for these negotiations.

Operational changes to lessen the impact on the Community:

CICO will form an Operating Committee with the neighborhood as our partner, to create a 10 member committee, selected by the neighborhood and representing a 360 degree ring around the Landfill. Each member will file a report by phone or email recording any odor or observation. In return for this service, each committee member will receive \$100 a month.

CICO will pay for an employee to patrol the perimeter of the landfill looking for plastic bags and other debris and monitoring all external appearance.

CICO will move the scales and entrance to the landfill to a new location on Rankin Mill Road after completion of this section of the Outer Loop.

CICO will minimize odor by using best practices including new cover material, minimal working area at the landfill, fully contained processing, pelletizing of organic material and operating an updated modern gas collection system.

CICO will enlarge buffers from 500ft to 625ft wherever possible. We intend to explore barriers in critical areas to improve sight aesthetics.

CICO will contract with NCA&T to conduct Education Outreach at the landfill.

CICO will assume the closure costs at the landfill for the City of Greensboro, currently estimated at \$7,400,000. This is the same amount of money that it would cost to train and equip 76 Police Officers.



Statement of Qualifications



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David Garrett

Technology Chairman

With over 25 years experience in planning and managing geological and geotechnical engineering projects, focusing heavily on solid waste projects for the past 18 years, David's cross disciplinary background is ideally suited to complex environmental project design and permitting for mining, industrial, and solid waste facilities. David specializes in facility planning, site characterization, permitting/design, geotechnical engineering, drainage management, geophysical investigation, groundwater and surface water quality, construction quality assurance, stabilization and volume optimization, financial assurance/cost estimation, sedimentation and erosion control, facility monitoring and operations support. Past experience includes major public transportation projects (highways and bridges), commercial/industrial structures, earthen dams, power plants, water supply, waste water treatment facilities, pipelines, pavements, and landfills. Other experience includes general earthwork and foundation design, "pre-buy" evaluations, master planning, environmental site assessments, site restoration and remediation, financial evaluation, operations, local government site plan approval, forensic analysis, and litigation support. David has authored several professional papers and teaches continuing education courses to other professionals, and he chaired a state licensing board and professional societies.

SOLID WASTE PROJECTS

North Carolina: Robeson County MSWLF; BFI Charlotte Motor Speedway (CMS-V) MSWLF; A-1 Sandrock, Inc. CDLF (Guilford County); Rutherford County MSWLF; Rutherford County CDLF; Viewmont Sandrock LCID (Guilford County); BFI Anson County Landfill; City of Winston-Salem MSWLF; City of High Point MSWLF; City of Greensboro MSWLF; Davidson County MSWLF; Republic Waste Upper Piedmont MSWLF (Person County); Republic Waste Foothills MSWLF (Caldwell County, NC); Shotwell Landfill, Inc. (Wake County); Buffaloe LCID Landfill (Wake County); C&D Landfill, Inc. (Pitt County); Halifax County MSWLF; Halifax County Coal Ash Landfill; Alamance County MSWLF; BASF/Enka Industrial Landfill (Buncombe County); Proposed "Bioreactor" Landfill (Lee County); Waste Corporation of America CDLF (Guilford County, Wake County)

South Carolina: International Paper Industrial Landfill (Eastover); Horry County MSWLF;

Tennessee: Mead Paper Industrial Landfill (Kingsport); Industrial Coal Ash Landfill (Kingsport);

Massachusetts: Mead Paper Landfill (South Lee)

Connecticut: Pharmaceutical Manufacturing Facility (North Haven)

Ohio: Elkem Metals Wastewater Ponds (Ashtabula); Eramet Metals (Marietta)

EDUCATION:

M.C.E., Civil Engineering, North Carolina State University, Raleigh, NC, 1994

B.S., Geology, North Carolina State University, Raleigh, NC, 1983

PROFESSIONAL REGISTRATION:

Professional Geologist - NC #983, TN #2058, SC #2037

Professional Engineer, NC#25462, OH#69458, SC#23782

NCEES National Engineering Certification #20297



Kenn Cassell

Landfill Operations and Planning

Kenn Cassell has worked in the area of Waste Management for over 25 years. This includes over 15 years in the Private Sector and 12 years with the Public. In recent years Kenn has been self-employed as a consultant in the Solid Waste Industry, primarily working in the Southeastern United States.

City of Greensboro: Manager of landfill and Assistant Administrator of Sanitation Division. Modernized landfill up to current EPA standards, directed the construction and implementation of the first landfill gas recovery system. Assisted in the conversion to automated collection in Greensboro. Implemented waste characterization and tracking system to define waste stream. Managed the City's first composting operation. Certified by North Carolina as manager of landfill operations.

Chambers Development Corp: Permitted, constructed, developed and managed the Chambers Atlanta Landfill. A subtitle D facility permitted to accept residential, commercial and special industrial waste in Georgia. Assisted in the development of the Anson County, NC landfill. Southern Regional manager of landfill operations for Chambers, which included 12 landfills across the southeast. Certified by Georgia as manager of landfill operations.

BFI: Permitted, constructed, developed and managed the BFI Sampson County Landfill in Sampson County, NC. A regional landfill permitted to accept waste from within the borders of North Carolina. Implemented a special waste sales and tracking program. Developed and implemented a Bio-remediation facility to handle petroleum contaminated soils. Managed compliance program that kept facility in strict compliance with federal and state regulations. District Manager for eastern NC over landfill and transfer facilities.

Republic Services Inc: North Carolina Area Vice President for landfills, transfer stations, and recycling facilities. This included 4 regional landfills, 1 industrial landfill, 2 recycling facilities and multiple transfer operations across North Carolina. Implemented a complete special waste program for North Carolina.

Upper Piedmont Environmental: Regional landfill in Person County, NC. Directed the permitting, construction, development and operation of facility.

Foothills Environmental: Negotiated agreement with Caldwell County, NC to construct and operate a regional landfill. Directed permitting, construction, development and operation of facility.

Uwharrie Environmental: Regional landfill in Montgomery County, NC. Directed permitting, construction, development and operation of facility. This operation included a materials recovery facility to extract recyclables from mixed waste stream. Managed the closure of old county landfill under modern state regulations. Permitting included facility modifications and cap increases.

East Carolina Environmental: Regional landfill in Bertie County, NC. Directed permitting, construction, development and operation of facility. Permitting included facility modification and multiple phases of landfill.

Private Consultant: Worked with various entities to permit and develop construction and demolition landfills throughout the southeastern United States.



Robert W. Mays – Project Manager

Robert Mays is the President of Amaysing Consultants, a consulting firm headquartered in Greensboro, NC that consults in the areas of Local Government, Private Real Estate Development, Real Estate Infrastructure, and Economic Development. Mr. Mays opened the firm in 2005 and in the past five years has successfully consulted in several projects in Greensboro and the surrounding Triad area. His largest project to date is Infrastructure consulting for the Triad Business Park, a 400 acre land tract in Kernersville, NC. Mr. Mays coordinated infrastructure arrangements for water from Forsyth County, sewer from the city of High Point and all roadway improvements. This venture is now under construction as the Fed Ex Ground headquarters for the entire Southeast region. Mr. Mays has also recently developed a Light Industrial project of 500 acres in the city of High Point.

As a life-long resident of Greensboro, Mr. Mays has been active in many civic projects including: Redevelopment Commission current member, past member of Greensboro city council serving eight years, Past Greensboro Jaycee President, and past President of the Greensboro Youth Soccer Association.

Paul G. Gilmer, Sr – Realtor/Neighborhood Contact

Paul has participated in various commissions and boards both professional and civic throughout Greensboro, NC. He currently serves on the Board of Directors for the Gate City Company (in association with the Greensboro Community Foundation). He served as Vice- Chairman and Chairman Elect for the Greensboro Zoning Board for five years. In the past he has served on: the Greensboro Planning Board (as chairman for 5 yrs), the Greensboro Community Development Committee (as chairman for 2 yrs), the Greensboro Comprehensive Plan Steering Committee (for 2 yrs), and the Connections 2025 Comprehensive Plan Monitoring Committee (for 2 yrs). Paul has served as Chairman of the Greensboro Realtor's Association Commercial Division. He also served on the board of directors on the residential and commercial divisions of the Realtor's Association. He is the Past Director and Vice- Chairman of the Greensboro Housing Coalition. He is also the Past Director of the NC Low Income Housing Coalition. Paul acted in many capacities under TREBIC (Triad Real Estate & Building Industry Coalition) including: member of the Executive Committee and Chairman of the Political Action Committee. He is the recipient of the Greensboro Human Relations Commission Housing Award (1992). Paul is also a graduate of the Chamber of Commerce, Leadership Greensboro Class of 1996.

John Rodenbough, Psy. D. – CEO, Carolina Energy Development

John is the IES representative; lead investigator and planner in the development of a broad range of clean energy technology and environmentally sound solutions for waste management. He has worked as a consultant and educator in the broader field of business development, employment, and team/executive development. Dr. Rodenbough is the President/CEO of NeuropsychWorks, Inc. working as an entrepreneur building a software company and developing specialized software programs for professionals. He has run his own businesses in both the software field and his professional specialty of neuropsychology.

Dr. Rodenbough received his B.A. in psychology from the University of North Carolina at Wilmington and his masters and doctorate degrees in clinical psychology from The Florida Institute of Technology. After moving to Greensboro, NC, Dr. Rodenbough continued with his private practice and Software Company before joining Moses Cone Memorial Hospital as a clinical psychologist/neurophysiologist. He has worked as a consultant with Drake Beam Morin, Inc. in executive employment and redevelopment/placement work. He has also worked with the International School of Management (Paris Campus) as a consultant in their doctoral program in business management.



Cameron Cooke – Attorney

Cameron Cooke is an attorney and a certified mediator in the federal and state courts. He attended the University of North Carolina-Chapel Hill and has degrees in Business and Law. He has served as a corporate attorney as well as in private practice. He has been involved in many aspects of the law including corporate, employment, intellectual property and environmental fields, litigating in each area. He served in many capacities in the community, among them two terms as a City Councilman, one at large and one representing a district.

Lynn M. Reddeck – Realtor/Project Coordinator

Lynn Reddeck is a BA graduate of High Point College and a NC licensed real estate Broker. Working with developers she participated in the procurement of land to bring FedEx Ground to the Triad and collaborated with multiple municipalities to bring infrastructure. As Director of New Homes for a major Triad real estate firm, Lynn managed the procurement of land for residential communities as well as the marketing, staffing, and client relations for 15 residential and multi-use communities. Included in this effort was Springbrook Meadows, a City of High Point Housing Authority community. She participated in the effort to bring North Carolina's first bio-ethanol plant, Clean Burn Fuels, into operation. The plant is currently open and operating outside Raeford, NC. Lynn is currently working on land acquisition for a 600 + acre industrial development in the center of the Triad, and on land acquisition and quality of life issues concerning economic development in Northeast Greensboro.

Mariah Mays – Realtor/Project Coordinator

Mariah is a graduate of the University of TN – Knoxville. She earned her BS in Business Administration with a concentration in Accounting. Mariah has over 8 years in advanced Finance including four years as a Bond trader in St. Croix, US Virgin Islands. After returning to Greensboro, NC, Mariah successfully completed her NC Real Estate license. She is currently working as a freelance technical writer.

Executive Summary

RFP Questions – CICO Answers



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Direct Responses to questions of the RFP

Is the waste management option able to be permitted through NC DENR?

The proposed technology can be permitted through the NC DENR Divisions of Waste Management, Air Quality, Land Quality and Water Quality. **CICO** has discussed the pyrolysis with Division of Waste Management officials and found a favorable response. The facility would be considered a “Treatment and Processing” facility, which is covered under 15A NCAC 13B .1501 et seq. **CICO** believes the facility will be eligible for a tax credit made available under these rules, and **CICO** further believes that the \$2 per ton tipping tax levied on land filled wastes should be waived. The facility is permitted in California, with the stringent air quality standards effective in that State. This history of permitting will set the stage for discussions with North Carolina DENR officials. The process is non-discharging, thus there are no anticipated Land Quality of Water Quality issues, other than anticipated construction related sediment and erosion control and storm water runoff permits, as would be required of any commercial development.

Will the proposed option satisfy the local zoning requirements?

The prospective site for the pyrolysis plant is zoned for Heavy Industry and/or solid waste activities. White Street is within the jurisdiction of the City and can be issued Special Use Permits if the City deems necessary.

Does the waste management option describe each systematic process including all inputs and outputs, environmental impacts and discharges?

Yes, the systematic process description is provided in the Waste management technology section, including all inputs, outputs, environmental impacts (none) and discharges (minimal).

What are the site requirements, transportation routes and the developable area needs for the proposed waste management option?

Site requirements include space for a 400x 400 foot building pad and access to natural gas or landfill gas, the electrical grid, and City water and sewer. Transportation to and from the site will be via existing City streets and thoroughfares – no transportation upgrades are needed, except that future incoming traffic would be routed from the extension of Cone Boulevard, rather than White Street, once that public project is completed. For landfill development at White Street the site for future cells (Phase 4) is to the south of the existing 51-acre footprint (Phase 3), shown on **Figure 1** (See Confidential Envelope). The proposed developable area at the White Street Facility for the pyrolysis plant includes existing concrete foundations used for a former shredding operation and other relatively level portions of the site in proximity to the scale house, as shown on **Figure 2** (See Confidential Envelope).

Does the planning process engage the surrounding community to identify and mitigate potential negative impacts of proposed solutions?

CICO’s first goal was to gain neighborhood support for this project. We have been in discussion with the White Street neighborhood leaders for the past nine months through numerous and ongoing meetings. We have advanced money to establish and file the paperwork for a 501(c)(3) corporation to be called the EDGE. This community development corporation will be funded by **CICO** from the proceeds of the facility operation.



The proposed waste management option shall not result in or require operational changes to the City's mode of solid waste collection, thus impeding the collection process or resulting in higher operational costs.

Implementation of the pyrolysis process will not impact current collections in any operational or financial way.

The proposed waste management option should not increase or impose any additional liabilities (economic or environmental) on the municipality.

Implementation of either of **CICO**'s proposed options will not impact the City's economic or environmental liabilities. **CICO** proposes to assume some of the economic liabilities for the White Street Facility, contingent on the City approving Options 1 and 2, whereas monies would be generated on the site that would be escrowed for closure, post-closure, monitoring and maintenance. **CICO** will maintain liability insurance for the duration of the operation and indemnify the City under a future contractual agreement appropriate to either Option.

Is the proposed waste management option a proven technique?

The Advanced Pyrolysis System is a well established technology that has experienced years of successful operation in California. The IES facility in California is a working operation available for visitation by City officials.

Does the proposed waste management option identify and specify performance guarantees?

CICO has calculated its pro forma for landfill operation with transition to pyrolysis at White Street based on the wastes that the City collects and hauls themselves, i.e., 143,000 tons per year. This minimum waste stream would be the only specific guarantee on the City's part to make these Options economically viable. Thus, **CICO** can guarantee a disposal cost for the City's waste stream at the quoted values, subject to appropriate cost escalators to reflect economic trends. The revenues from energy sales and marketing of byproduct are subject to facility performance and market conditions, hence this revenue is not identified as a performance guarantee, but it is reasonable to project that, given the known history of the California plant, the energy sales and carbon credits will be sufficient to make the operation viable.

Can the proposed waste management option demonstrate its financial strength and ability to perform the stated goals of the proposal?

Yes, upon proposal acceptance, **CICO** will post a performance bond or offer evidence of financial responsibility.

Is the proposed waste management option capable of managing the maximum daily waste volume of 1,500+ tons?

CICO and IES are designing a scalable facility that has the capacity to manage the maximum daily waste volume of 1,500+ TPD. The IES system provides a cache (enclosed in a building) to temporarily store the waste while it is being processed, with the system operating 24 hours a day, 7 days per week, 365 days per year. There will be redundancy of key systems to ensure continuous operation, factoring in scheduled equipment maintenance. The system is scalable, such that it may be expanded to meet the future needs of the City as the economy grows. Continued operation of the landfill, albeit at a reduced volume as the pyrolysis system volume increases, will provide overflow capacity if needed.



Is the proposed waste management option capable to manage all unprocessable waste as collected by municipal forces?

The proposed technology will accommodate ALL of the City's non-recyclable waste streams, including (but not limited to) household and commercial garbage, construction and demolition wastes, land clearing inert debris, yard wastes, and WWTP bio-solids. **CICO** will run or manage aggressive recycling programs beyond the current curbside recycling program.

Will the proposed waste management option manage any and all potential process residue?

CICO will manage or dispose of all residues from the pyrolysis plant, ideally sending this byproduct to manufacturing markets for additional revenue streams. In the event that markets do not keep up with the generation of the carbon-char residue, a small landfill phase will be operated at White Street for safe disposal.

Is the proposed waste management option consistent with NC's waste reduction goals?

CICO anticipates that the City can recycle nearly 100% of its solid wastes using the pyrolysis process and aggressive recycling of the incoming waste stream – this far exceeds the State's current waste reduction goal of 40%. The initial phase of pyrolysis operation, i.e., a 400 tpd facility, will process 40% of the City's 1000 tpd waste stream, again meeting the State's waste reduction goals

Will the proposed waste management option assist the City in complying with the State's Solid Waste Management Policy and Goals (N.C. G.S. 130-309.04)?

Yes, **CICO** shall assist the City in complying with the State's Solid Waste Management Policy and Goals.

Does the proposed waste management option identify the source of the waste feed stock and volume needed to ensure Financial stability of the selected option?

The source of waste for feedstock is the minimum amount of City-collected waste required to make the operation economically viable. Future arrangements with hauling companies will be pursued to enhance the revenue potential.

Does the proposed waste management option demonstrate an applicable regional implementation strategy?

Yes, **CICO** believes that our new affordable technology will allow each city to revisit their positions, thus bringing Guilford County back into future waste cooperation negotiations.



Attachments



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Total Cost savings to Greensboro

Year One Savings

Closure C&D Landfill and Phase III	\$7,400,000
Transfer and Landfill*	\$4,461,743
Landfill Equipment Shop	\$ 447,000
Compost Operation	<u>\$ 110,000</u>
Total Year One	\$12,418,743

Year Two Going Forward

Transfer and Landfill*	\$4,461,743
Landfill Equipment Shop	\$ 447,000
Compost Operation	<u>\$ 110,000</u>
Total Annual	\$5,018,743

*Transfer station debt (\$695,174) is deducted from this savings since the City would still owe that without operating the Transfer Station

Savings to the City of Greensboro with CICO, LLC operating the landfill vs. City operation of the Transfer Station and a lined landfill

Cost to the City of Greensboro **\$23.00/Ton**

Cost/Ton x City Tons* = Total City Cost
\$23.00 x 151,006* = \$3,473,138

Current City Cost for Transfer and Landfill
Cost/ton Transfer Station x City Tons = City Cost
\$41.96/ton x 143,240 tons = \$6,010,350

Cost/ton Landfill x City Tons = City Cost
\$337.33/ton x 7,766 tons = \$2,619,705

Total Cost for Both = \$8,630,055

Annual Savings to City of Greensboro

Transfer Station Cost + Landfill Cost – CICO Cost = Annual savings to City
\$6,010,350 + \$2,619,705 - \$3,473,138 = \$5,156,917

*Includes tons collected by City forces taken to transfer station and wastewater treatment facility waste disposed of at White Street Landfill

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